

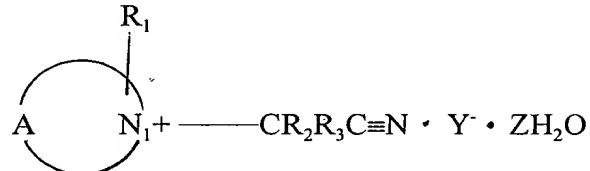
APPENDIX I

In the Claims:

1. A substantially solid composition comprising:

5 a compound with the structure of Formula I

FORMULA I



10 wherein A is a saturated ring formed by a plurality of atoms in addition to the N_1 atom, the saturated ring atoms including at least one carbon atom and at least one heteroatom in addition to the said at least one heteroatom selected from the group consisting of O, S, and N atoms, the substituent R_1 bound to the N_1 atom of the Formula I structure is (a) a C_{1-8} alkyl or alkoxyalkyl where the alkoxy is C_{2-4} , (b) a C_{4-24} cycloalkyl, (c) a C_{7-24} alkaryl, (d) a repeating or nonrepeating alkoxy or alkoxyalkyl alcohol, where the alkoxy unit is C_{2-4} , or (e) $-CR'_2R'_3C\equiv N$ where R'_2 and R'_3 each H, a C_{1-24} alkyl, cycloalkyl, or alkaryl, or a repeating or nonrepeating alkoxy or alkoxyalkyl alcohol where the alkoxy unit is C_{2-4} , the R_2 and R_3 substituents being each H, a C_{1-24} alkyl, cycloalkyl, or alkaryl, or a repeating or nonrepeating alkoxy or alkoxyalkyl alcohol where the alkoxy unit is C_{2-4} , Z is a value in the range of 0 to 10, and wherein Y is monovalent or multivalent and is sulfate, bisulfate, tosylate, or mixtures of sulfate and bisulfate as counterion, the Formula I compound capable of reacting with a peroxygen source in alkaline solutions; and,

15 a bleaching and/or cleaning adjuvant carried by, coated with, or admixed with the compound.

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25 2. The Formula I compound as in Claim 1 wherein A is a saturated ring formed by four carbon atoms and one oxygen atom in addition to the N_1 atom.

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3. The Formula I compound as in Claim 1 wherein A is a saturated ring formed by four carbon atoms and an N₂ atom in addition to the N₁ atom, with N₂ being a secondary amine, a tertiary amine having the substituent -CR₅R₆CN or a quaternary amine having the substituents -R₅ and -CR₅R₆CN, wherein R₅ and R₆ may each be a H or 5 C₁₋₁₆ alkyl.

4. The composition as in Claim 1 wherein the Formula I compound is from about 1 wt.% to less than about 100 wt.% of the composition total.

5. The composition as in Claim 1 being substantially non-hygroscopic.

6. The composition as in Claim 1 wherein the composition includes from about 1 wt.% to about 99 wt. % of another compound related to the Formula I compound, but differing therefrom in counterion, and wherein Formula I compound is in an amount effective for reduced hygroscopicity of the salt composition.

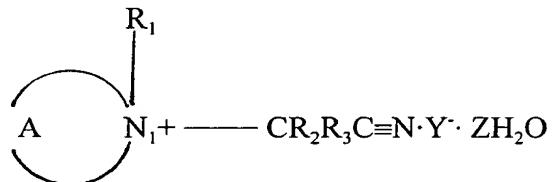
7. The composition as in Claim 1 wherein the Formula I compound has a water uptake of less than about 5 wt.% water at 80% R.H. and 80°F at equilibrium or about 48 hours.

8. The composition as in Claim 1 wherein Z is a value in the range of 0 to 6.

9. The composition as in Claim 2 wherein R₁ is methyl, ethyl, or butyl.

10. A substantially solid composition comprising:
a compound with the structure of Formula I

FORMULA I



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wherein A is a saturated ring formed by five atoms in addition to the N₁ atom, the five saturated ring atoms being four carbon atoms and a heteroatom, the substituent R₁ bound to the N₁ atom of the Formula I structure is (a) a methyl, ethyl, or butyl group or alkoxylated alkyl where the alkoxy is C₂₋₄, (b) a C₄₋₂₄ cycloalkyl, (c) a C₇₋₂₄ alkaryl, (d) a repeating or nonrepeating alkoxy or alkoxylated alcohol, where the alkoxy unit is C₂₋₄, or (e) -CR'₂R'₃C≡N where R'₂ and R'₃ are each H, a C₁₋₂₄ alkyl, cycloalkyl, or alkaryl, or a repeating or nonrepeating alkoxy or alkoxylated alcohol where the alkoxy unit is C₂₋₄, the R₂ and R₃ substituents are each H, a C₁₋₂₄ alkyl, cycloalkyl, or alkaryl, or a repeating or nonrepeating alkoxy or alkoxylated alcohol where the alkoxy unit is C₂₋₄, Z is a value in the range of 0 to 10, and wherein Y is monovalent or multivalent and is sulfate, bisulfate, tosylate, or mixtures of bisulfate and sulfate as counterion; and,

5 a bleaching and/or cleaning adjuvant carried by, coated with, or admixed with the compound.

11. The composition as in Claim 10 being substantially non-hygroscopic.

12. The composition as in Claim 10 wherein the Formula I compound is from about 1 wt.% to about 100 wt. % of the total composition.

20 13. The composition as in Claim 10 wherein the composition includes from about 1 wt.% to about 99 wt.% of another compound related to the Formula I compound, but differing therefrom in counterion, and wherein Formula I compound is in an amount effective for reduced hygroscopicity of the salt composition.

25 14. The composition as in Claim 10 wherein the Formula I compound has a water uptake of less than about 5 wt.% water at 80% R.H. and 80°F at equilibrium or about 48 hours.

15. The composition as in Claim 10 wherein Z is 0 to 1.

30 16. The composition as in Claim 10 wherein the heteroatom is oxygen or sulfur and R₁ is a lower alkyl.

17. The composition as in Claim 16 being in the form of flowable granules.

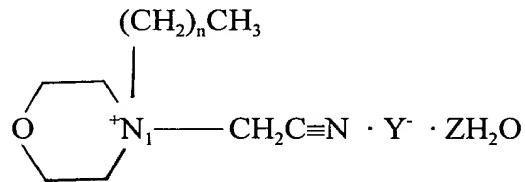
18. The composition as in Claim 17 wherein the granules have an average particle size between about 100 μm to about 1200 μm .

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19. The composition as in Claim 17 wherein the granules are substantially non-aggregating under ambient conditions.

20. A substantially solid salt composition comprising:
a compound with the structure of Formula II

FORMULA II



wherein n is 0 to 7, Z is a value in the range of 0 to 10, and Y is monovalent or multivalent and is sulfate, bisulfate, tosylate, or mixtures of sulfate and bisulfate as counterion; and

20 a bleaching and/or cleaning adjuvant carried by, coated with, or admixed with the compound.

21. The salt composition as in Claim 20 wherein the Formula II compound is from about 1 wt.% to about 100 wt.% of the composition total.

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22. The salt composition as in Claim 20 being substantially non-hygroscopic.

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23. The salt composition as in Claim 20 wherein the salt composition includes from about 1 wt% to about 99 wt.% of another compound related to the Formula II compound, but differing therefrom in counterion, and wherein Formula II compound is in an amount effective for reduced hygroscopicity of the salt composition.

24. The salt composition as in Claim 20 wherein the Formula II compound has a water uptake of less than about 5 wt.% water at 80% R.H. and 80°F at equilibrium or about 48 hours.

5 25. The salt composition as in Claim 20 wherein Z is 0 to 6.

26. The salt composition as in the Claim 20 wherein n is an integer from 0 to 4, and Z is in a range of from about 0 to about 1.

10 27. The salt composition as in Claim 20 wherein n is 0.

28. The salt composition as in Claim 27 wherein Z is in a range from about 0 to about 1.

15 29. The salt composition as in Claim 27 wherein the salt composition includes from about 1 wt.% to about 99 wt.% of another compound related to the Formula II compound, but differing therefrom in counterion, and wherein Formula II compound is in an amount effective for reduced hygroscopicity of the salt composition.

20 30. The salt composition as in Claim 27 being in the form of granules.

31. Substantially solid N-methyl morpholinium acetonitrile bisulfate.

25 32. The substantially solid N-methylmorpholinium acetonitrile bisulfate of Claim 31 in crystalline form.

33. A mixture of substantially solid N-methyl morpholinium acetonitrile bisulfate and sulfate.

30 34. A process for preparing the compound of Claim 1 comprising:

heating the Formula I compound in alkyl sulfate form in an acid aqueous solution for a sufficient period of time to convert at least some of the compound to have sulfate or bisulfate as counterion.

5 35. The process as in Claim 34 wherein the heating is from about 40°C to 150°C.

36. The process as in Claim 34 wherein the acid aqueous solution has a pH of from about -1 to about 6.

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